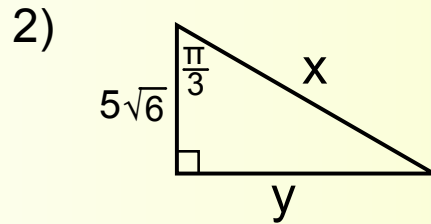
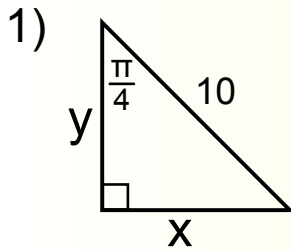


## Alg. 2 Warm Up #12-1

Find  $x$  and  $y$ , exact and simplified.

138)

$$(x-3)(x^3 - x^2 - 7x + 3)$$

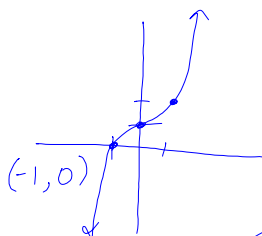
$(x-k)$   $\swarrow$   $\searrow$   $3$

$$\begin{array}{r|rrrr}
 & 1 & -1 & -7 & 3 \\
 3 & & 3 & 6 & -3 \\
 \hline
 & 1 & 2 & -1 & 0
 \end{array}$$

$$(x-3)^2(x^2 + 2x - 1)$$

HW Questions:

143a)  $y = x^3 + 1$



$$\begin{array}{c|ccc} -1 & 1 & 0 & 0 & 1 \\ & -1 & 1 & \bullet & 1 \\ \hline & 1 & -1 & 1 & \odot \end{array}$$

↓

$$(x+1)(x^2 - x + 1)$$

$$x^2 - x + 1 = 0$$

$$\begin{aligned} a &= 1 \\ b &= -1 \\ c &= 1 \end{aligned}$$

$$x = \frac{1 \pm \sqrt{1 - 4(1)(1)}}{2(1)}$$

$$x = \frac{1 \pm \sqrt{-3}}{2}$$

$$\frac{1 \pm \sqrt{-1}\sqrt{3}}{2}$$

$$x = \frac{1 \pm \sqrt{3}i}{2}$$

$$x = -1$$

145)  $(\sqrt{x^2 + 6})^2 = (x + 2)^2$

$$x^2 + 6 = x^2 + 4x + 4$$

$$6 = 4x + 4$$

148)  $p(x) = x^3 - 6x^2 + 7x + 2$

a)  $p(2) = 2^3 - 6(2)^2 + 7(2) + 2$   
 $= 8 - 24 + 14 + 2$

$p(2) = 0$

b) 
$$\begin{array}{r|rrrrr} 2 & 1 & -6 & 7 & 2 \\ & & 2 & -8 & -2 \\ \hline & 1 & -4 & -1 & 0 \end{array}$$

$p(2) = \text{remainder}$

d)  $x = 2,$

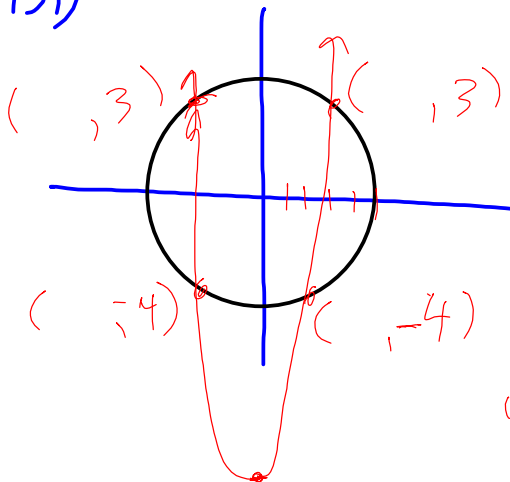
c)  $(x-2)(x^2 - 4x - 1)$

$$x^2 - 4x + 4 = 1 + 4$$

$$\sqrt{(x-2)^2} = \sqrt{5}$$

$$x = 2 \pm \sqrt{5}$$

151)



$$x^2 + y^2 = 25$$

$$y = x^2 - 13$$

$$y + 13 = x^2$$

$$y + 13 + y^2 = 25$$

$$y^2 + y - 12 = 0$$

$$(y + 4)(y - 3) = 0$$

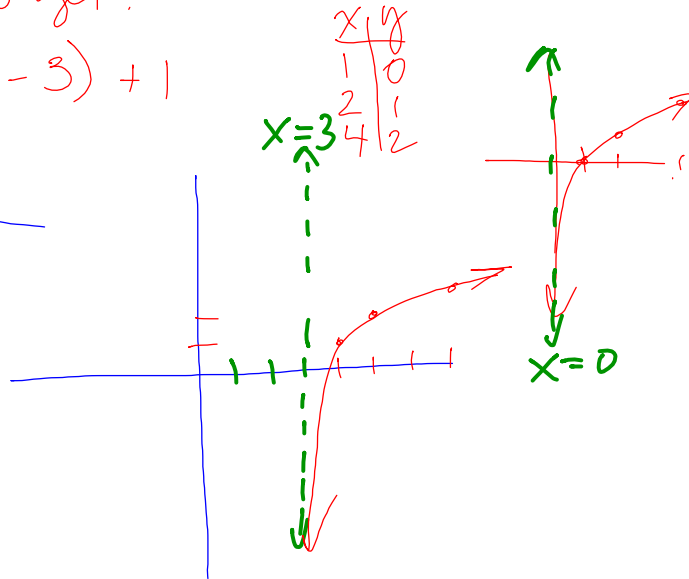
$$y = -4, 3$$

## Log Review:

1) Graph the parent first  
transform to get:

$$y = \log_2(x-3) + 1$$

$x+3$	$y-1$
4	1
5	2
7	3



Solve

$$4^x = 8$$

$$(2^2)^x = 2^3$$

$$\frac{2x}{2} = \frac{3}{2}$$

$$x = \frac{3}{2}$$

$$4^x = 17$$

$$\log 4^x = \log 17$$

$$x(\log 4) = \frac{\log 17}{\log 4}$$

$$x \approx 2.04$$

Solve

$$\log_5 x + \log_5 (x-2) = \log_5 (x+18)$$

$$\log_5 (x^2 - 2x) = \log_5 (x+18)$$

$$x^2 - 2x = x + 18$$

$$x^2 - 3x - 18 = 0$$

$$(x-6)(x+3) = 0$$

$$\log_5 (-3)$$

$x = 6, -3$  extraneous.

$$\log_7 (x+20) = 2$$

$$7^2 = x+20$$

Classwork:

Final Exam Review (Yellow)

HW: More Final Exam Review

Problems in Chapter 9, starting  
on page 454, find and do

#25 - 28, 42 - 44, 53,

56, 58, 69, 77, 79